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EXAMINER

GORDON, CARLENE MICHELLE

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/021,609	Applicant(s) SEKINE, NORIHISA	
	Examiner Carlene Gordon	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-25 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the application filed on December 12, 2001.

Claims 1-25 are pending in the application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 9 recites a term "MPU" not previously in the base claim and not defined in claim 9. This term renders claim 9 indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 8-9, 10, 13-15, 17-19, 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Agha et al. (USPN 6,044,461), hereafter "**Agha**".

7. As to claim 1:

Agha teaches a nonvolatile memory device configured to store firmware (col. 1 lines 15-22 "program code includes... BIOS"; col. 1 lines 65-67 "stored in an electrically-rewriteable read-only memory such as flash memory");

first means for issuing an instruction to an operating system to make the operating system execute a shutdown process (col. 2 lines 22-23 "system to be shutdown"; col. 4 lines 29-40 "operating system"), and to update the firmware (col. 2 lines 23-26 "updates to the program code") stored in the nonvolatile memory device (col. 1, lines 15-22 "BIOS"; col. 1, lines 65-67 "stored in an electrically-rewriteable read-only memory such as flash memory"), after the operating system has completed the shutdown process (col. 2 lines 21-28 "shutdown... to permit updates to the program"); and

second means, responsive to the instruction to update the firmware (col. 4 lines 29-40— Explains that "computer programs comprising instructions" when "executed" perform the steps of updating), for updating the firmware after the operating system has completed the shutdown process (col. 4 lines 29-40 "operating system"; col. 2 lines 21-28 "shutdown... to permit updates to the program").

8. As to claim 2:

Rejection of claim 1 is incorporated and further Agha discloses wherein the first

Art Unit: 2124

means includes means for issuing, to the operating system, a shutdown request containing a request for updating the firmware, thereby making the operating system issue the instruction to update the firmware after the operating system has completed the shutdown process (col. 2 lines 22-23 "system to be shutdown in a maintenance mode to permit updates"; col. 4 lines 29-40 "operating system" – Explains that "computer programs comprising instructions" when "executed" perform the steps of updating; col. 2 lines 21-25 "the computer system is shutdown to permit the updates").

9. As to claim 3:

Rejection of claim 2 is incorporated and further Agha discloses the instruction to update the firmware supplied from the operating system is included in a power management event, which is issued from the operating system to power off or reboot the information-processing apparatus (col. 4 lines 29-29 "instruction that... cause systems... to perform"; col. 2 lines 21-29 "computer system must be rebooted", "maintenance mode"); and

the second means includes means for powering off or rebooting the information-processing apparatus in response to the power management event, after the firmware has been updated (col. 2 lines 21-29 "once the updates have been performed, the computer system must be rebooted").

10. As to claim 8:

Rejection of claim 1 is incorporated and further Agha discloses wherein the

Art Unit: 2124

firmware stored in the nonvolatile memory device is a BIOS program configured to control hardware of the information-processing apparatus (col. 1 lines, "BIOS program code").

11. As to claim 9:

Rejection of claim 1 is incorporated and further Agha discloses wherein the firmware stored in the nonvolatile memory device is a program to be executed by an MPU in a controller that is incorporated in the information-processing (Fig. 1 reference 22 "Startup Processor", reference 24 "Flash ROM").

12. As to claim 10:

Agha discloses a nonvolatile memory device configured to store firmware (col. 1 lines 15-22 "program code includes... BIOS"; col. 1 lines 65-67 "stored in an electrically-rewriteable read-only memory such as flash memory");

a first means for issuing, to an operating system, a shutdown request containing a request for updating the firmware, thereby making the operating system execute a shutdown process (col. 2 lines 21-29, "computer system... shutdown to permit updates to the program code"; col. 4 lines 29-40 "operating system" – Explains that "computer programs comprising instructions" when "executed" perform the steps of updating which involve the shutting down of the system.), and also causing the operating system to issue, after the operating system has completed the shutdown process, a power management event including an instruction to update the firmware stored in the nonvolatile memory device and to power off or reboot the information-processing

Art Unit: 2124

apparatus (col. 2 lines 21-29, "once the updates have been performed, the system must be rebooted" "maintenance mode"; col. 4 lines 39-49 "operating system" "instructions that... cause... systems... to perform"); and

second means, responsive to the power management event issued from the operating system, for executing a firmware-updating process to update the firmware stored in the nonvolatile memory device thereby providing new firmware, and then powering off or rebooting the information-processing apparatus (col. 2 lines 21-29 "once the updates have been performed", "system must be rebooted").

13. As to claim 13:

Agha discloses a nonvolatile memory device configured to store firmware (col. 1 lines 15-22 "program code includes... BIOS"; col. 1 lines 65-67 "stored in an electrically-rewriteable read-only memory such as flash memory");

firmware-updating means for updating the firmware stored in the nonvolatile memory device (col. 2 lines 21-29 "updates have been performed"); and

means for instructing, when updating the firmware, the firmware-updating means to update the firmware (col. 4 lines 29-39 "routines executed to implement"), using a power management event that is issued from an operating system being executed in the information-processing apparatus (col. 4 lines 29-39 "operating system"; col. 2 lines 21-29 "maintenance mode"), the power management event causing initiation and completion of a shutdown process (col. 2 lines 21-29 "requires computer system to be shutdown... in maintenance mode"), then an updating of the firmware and lastly a

Art Unit: 2124

powering off or rebooting of the information processing system (col. 2 lines 21-29 "once updates have been performed, the computer system must be rebooted").

14. As to claim 14:

Rejection of claim 13 is incorporated and further Agha discloses shutdown process closes down all active task including closing device drivers forming part of said information processing apparatus (col. 2 lines 21-29, "computer system to be shutdown"; col. 1 lines 45-56 "hardware devices").

15. As to claim 15:

Rejection of claim 14 is incorporated and further Agha discloses information processing apparatus includes a communication interface, a display controller, a display and an I/O controller and said shutdown process closes down said communication interface, said display controller, said display and said I/O controller (Fig. 1 "Interface", "Controller"; col. 2 lines 21-29 "computer system to be shutdown").

16. As to claim 17:

Agha discloses making an operating system execute a shutdown process (col. 2 lines 21-29 "requires computer system to be shutdown"; col. 4 lines 29-29 "routines implemented as part of an operating system"), and issuing an instruction to update (col. 2 lines 21-29 "updates to the program code"; col. 4 lines 29-39 "instructions that... cause those devices to perform steps") firmware stored in a nonvolatile memory device

Art Unit: 2124

incorporated in the information-processing apparatus (col. 1 lines 18-22 "program code includes... BIOS"; col. 1 lines 65-67 "stored in an electrically-rewriteable read-only memory such as a flash memory"), after the operating system has completed the shutdown process (col. 2 lines 21-29 "shutdown... to permit updates to the program code"); and updating the firmware after the operating system has completed the shutdown process, in response to the instruction to update the firmware (col. 2 lines 21-29 "shutdown... to permit updates to the program code"; col. 4 lines 29-39 "instructions that... cause those devices to perform steps").

17. As to claim 18:

Rejection of claim 17 is incorporated and further Agha discloses wherein the issuing the instruction to update the firmware includes issuing a shutdown request containing a request for updating the firmware (col. 2 lines 21-29 "shutdown to permit updates to the program") (see claim 17), thereby making the operating system issue the instruction to update the firmware after the operating system has completed the shutdown process (see col. 2 lines 21-29 and col. 4 lines 29-39).

18. As to claim 19:

Rejection of claim 18 is incorporated and further Agha discloses the instruction to update the firmware is included in a power management event (col. 2 lines 21-29 "maintenance mode" "shutdown... to permit updates"), which is issued from the operating system (col. 4 lines 29-39 "routines... implemented as... operating system") to

Art Unit: 2124

power off or reboot the information-processing apparatus (col. 2 lines 26 “must be rebooted”), when the operating system has completed the shutdown process (col. 2 lines 21-29 “once updates... system... rebooted” – The updates occur after the shutdown process –see col. 2 lines 21-29) ; and

the updating includes powering off or rebooting the information-processing apparatus in accordance with the power management event, after the firmware has been updated (col. 2 lines 21-29 “maintenance mode” “once the updates have been performed... system must be rebooted”).

19. As to claim 22:

Agha discloses issuing, to an operating system, a shutdown request (col. 2 lines 21-29 “requires computer system to be shutdown”; col. 4 line 29-39 “implemented as part of an operating system”) containing a request for updating the firmware (col. 2 lines 21-29 “shut down to permit updates to the program code”; col. 4 lines 29-39 “instruction that... cause... systems to perform steps”) stored in a nonvolatile memory device provided in the information-processing apparatus (col. 1 lines 18-22 “program code includes... BIOS”; col. 1 lines 65-67 “stored in an electrically-rewriteable read-only memory such as a flash memory”), thereby making the operating system execute a shutdown process (col. 2 lines 21-29 “requires computer system to be shutdown”), and also causing the operating system to issue, after the operating system has completed the shutdown process, a power management event as an instruction to update the firmware and to power off or reboot the information-processing apparatus

Art Unit: 2124

(col. 2 lines 21-29 "once the updates have performed the computer system must be rebooted") (col. 4 lines 29-39 "implement as part of operating system", "instructions that... cause those devices to perform steps"); and

executing a firmware-updating process to update the firmware into new firmware, in response to the power management event issued from the operating system when the operating system has completed the shutdown process (col. 2 lines 21-29 "shutdown in a maintenance mode to permit updates"), and then powering off or rebooting the information-processing apparatus (col. 2 lines 21-29 "once the updates have been performed, the computer system must be rebooted").

20. As to claim 23:

Agha discloses issuing, from an application program executed on an operating system to the operating system (col. 4 lines 29-39 "computer program" "routines... implemented as part of an operating system"), a shutdown request (col. 2 lines 21-29 "requires computer system to be shutdown") containing a request for updating firmware (col. 2 lines 21-29 "shut down to permit updates to the program code") stored in a nonvolatile memory device provided in the information-processing apparatus (col. 1 lines 18-22 "program code includes... BIOS"; col. 1 lines 65-67 "stored in an electrically-rewriteable read-only memory such as a flash memory");

activating a firmware-updating program operable without the operating system (col. 4 lines 29-39 "computer programs" "as part of an operating system or... program"), in response to a power management event as an instruction to update the

Art Unit: 2124

firmware and to power off or reboot the information-processing apparatus (col. 2 lines 21-29 "maintenance mode" "updates to the program" "must be rebooted"), which is issued from the operating system after the operating system has completed a shutdown process (col. 2 lines 21-29 "shutdown in a maintenance mode to permit updates") (col. 4 lines 29-39 "implement as part of operating system", "instructions that... cause those devices to perform steps"); and

powering off or rebooting the information-processing apparatus after the firmware is updated using the firmware-updating program (col. 2 lines 21-29 "once the updates have been performed, the computer system must be rebooted") (col. 4 lines 29-29 "computer program comprise instruction that cause... to perform steps").

21. As to claim 24:

Agha discloses a program stored in a storage medium and operable, when executed on a computer to cause said computer to execute a firmware-updating process for updating of firmware in the computer, said program causing said computer to perform the steps of (col. 4, lines 40-52 "program product" "non-volatile memory devices..."):

receiving a firmware-updating request for updating the firmware, which is issued from an operating system (col. 4, lines 29-39 "routines executed as part of an operating system"; col. 2 lines 21-29 "to permit updates to the program code") when the operating system has executed a shutdown process on the computer (col. 2 lines 21-29 "requires

the computer system to be shutdown... in a maintenance mode to permit updates to the program code"); and

executing a firmware-updating process for updating, into new firmware (col. 2 lines 21-29 "program code update", the firmware stored in a nonvolatile memory device provided in the computer (col. 1 lines 18-22 "program code includes... BIOS"; col. 1 lines 65-67 "stored in an electrically-rewriteable read-only memory such as a flash memory"), after the operating system has completed the shutdown process (col. 2 lines 21-29 "shutdown... to permit updates") (col. 4 lines 29-39 "computer program" "routines... implemented as part of an operating system").

22. As to claim 25:

Rejection of claim 24 is incorporated and further Agha discloses wherein the firmware-updating request is included in a power management event (col. 2 lines 21-29 "maintenance mode to permit updates to the program code") issued, from the operating system when the operating system has completed the shutdown process (see claim 24) (col. 2 lines 21-29 "shutdown in a maintenance mode to permit updates"), to power off or reboot the computer (col. 2 lines 21-29 "computer system must be rebooted"), and the program further operative to cause the computer to power off or reboot after completing the firmware-updating process (col. 2 lines 21-29 "once the updates have been performed, the computer system must be rebooted").

Art Unit: 2124

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 4-5, 11, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agha as applied to claims 2, 10, 18 above, and further in view of Kaneshima (USPN 5,737,585), hereafter "**Kaneshima**".

25. As to claim 4:

Rejection of claim 2 is incorporated and further Agha discloses the shutdown request issuing means for reporting to the operating system in order for new firmware to be written into the nonvolatile memory device (col. 2 lines 22-23 "system to be shutdown in a maintenance mode to permit updates"; col. 4 lines 29-40 "operating system" – Explains that "computer programs comprising instructions" when "executed" perform the steps of updating; col. 2 lines 21-25 "the computer system is shutdown to permit the updates")..

Agha discloses the second means includes means for reading the new firmware because of the instruction to update the firmware supplied from the operating system, and writing the read new firmware into the nonvolatile memory device (col. 4 lines 29-40 col. 4 lines 29-40 "operating system"; – Explains that "computer programs comprising instructions" when "executed" perform the steps of updating).

Agha does not disclose first address information indicative of a storage location of new firmware included in the shutdown request issuing means. Also, Agha does not disclose the information of a storage location indicated by a second address information included in the second means.

However, Kaneshima teaches a first and second address information (col. 4 lines 17-26 "Logical addresses... are converted to physical (real) addresses...").

Agha and Kaneshima are analogous art because both teach methods of updating firmware. At the time of the applicant's invention, it would have been obvious to one of ordinary skill in the art to include in the shutdown request issuing means and second means of Agha the first and second address information, respectively, of Kaneshima for maintenance of firmware (Agha, col. 2 lines 21-29 "maintenance mode" including updating the firmware on the nonvolatile memory. The motivation would have been because the mapping is required, when the firmware is maintained, i.e. the firmware is written to the non-volatile memory, as suggested by Kaneshima in col. 4 lines 33-37.

26. As to claim 5:

Rejection of claim 4 is incorporated and further claim 5 recites limitations already discussed in connection with claim 4 therefore; claim 5 is rejected under the same rationale as claim 4 (see claim 4).

27. As to claim 11:

Rejection of claim 10 is incorporated and further see rejection of claim 4.

28. As to claim 20:

Rejection of claim 18 is incorporated and further see rejection of claim 4.

29. As to claim 21:

Rejection of claim 18 is incorporated and further see rejection of claim 6.

30. Claims 6-7, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agha as applied to claims 2, 10 above, and further in view of Kaneshima (USPN 5,737,585), hereafter "**Kaneshima**" and Nevis et al. (USPN 6,581,159), hereafter "**Nevis**".

31. As to claim 6:

Rejection of claim 2 is incorporated and further Agha discloses the shutdown request issuing means (col. 2 lines 21-29 "requires... shutdown") includes means for reporting (col. 4 lines 29-39 "routines executed"), to the operating system (col. 4 lines 29-39 "operating system"), an updating information package that contains the new firmware (col. 2 lines 21-29 "program code update") to be written into the nonvolatile memory device (col. 1 lines 17-21 "program code... includes... BIOS") and an updating-process program used to write the new firmware into the nonvolatile memory device (col. 4 lines 29-39 "computer programs comprise instructions that..."); and

the second means include means for calling for the updating-process program in a storage location (col. 4 lines 29-52 "when read and executed"; "devices such as hard disk drives"), thereby causing the updating-process program to execute an updating process for writing the new firmware of the updating information package into the nonvolatile memory device (col. 4 lines 29-39 "...cause systems to perform the steps"; col. 2 lines 21-29 "updates have been performed").

Agha does not explicitly disclose the first and second address information indicative of a storage location of an update information package. Also Agha does not explicitly disclose the updating-process program contained in the updating information package.

However, Kaneshima teaches a first and second address information indicative of of storage location of an update information package (col. 4 lines 17-26 "Logical addresses... are converted to physical (real) addresses..." "corresponding addresses... stored in the nonvolatile memory"; lines 33-37 "mapping, when firmware is maintained").

Agha and Kaneshima are analogous art because both teach methods of updating firmware. At the time of the applicant's invention, it would have been obvious to one of ordinary skill in the art to include in the shutdown request issuing means and second means of Agha the first and second address information, respectively, of Kaneshima for maintenance of firmware (Agha, col. 2 lines 21-29 "maintenance mode") including updating the firmware on the nonvolatile memory. The motivation would have been because the mapping is required, when the firmware is maintained, i.e. the firmware is written to the non-volatile memory, as suggested by Kaneshima in col. 4 lines 33-37.

Also, Nevis teaches updating-process program contained in the updating information package (col. 3 lines 53-58 "BIOS update package... including a firmware update application and firmware update data").

Agha and Kaneshima and Nevis are analogous art because both teach methods of updating firmware. At the time of the applicant's invention, it would have been obvious to one of ordinary skill in the art to include in the updating information package of Agha containing the new firmware, the updating-process program of Nevis used for performing the update. The motivation would have been to provide an updating-process program that can "perform some validation to verify that the firmware update is the correct one for the target computing platform and that the update data is not corrupt" as taught by Nevis col. 3 lines 60-67, thereby preventing the writing of corrupt data.

32. As to claim 7:

Rejection of claim 6 is incorporated and further claim 7 recites limitations already discussed in connection with claim 6 therefore; claim 7 is rejected under the same rationale as claim 6 (see claim 6).

33. As to claim 12:

Rejection of claim 10 is incorporated and further see rejection of claim 6.

Allowable Subject Matter

34. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hobson (USPN 6,122,748) teaches Bios interacting with operating system.

Christeson et al. (USPN 5,579,522) teaches update of non-volatile memory.

Chiles et al. (USPN 6,581,157) teaches update of non-volatile memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlene Gordon whose telephone number is (571) 272-3722. The examiner can normally be reached on Mon.-Fri. 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2124

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.G./C.B.



ANIL KHATRI
PRIMARY EXAMINER